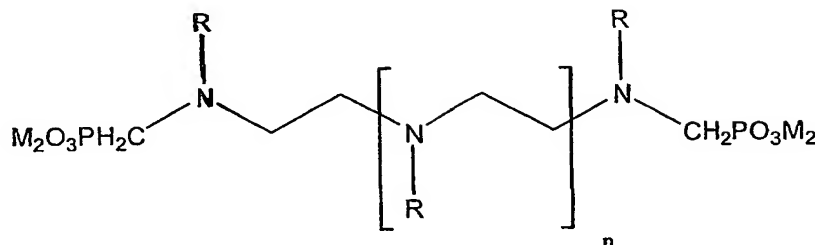


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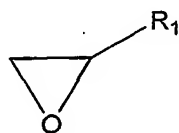
CLAIMS

- 1) Polyaminomethylenephosphonate derivatives, useful to carry out water treatments, of general formula



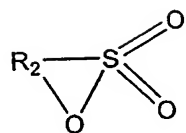
where n is between 2 and 15000; M_2 can be hydrogen or a suitable cation and each R group can be a $-CH_2PO_3M_2$ group, or linear or branched alkyl residue resulting from the reaction of the terminal amine groups with the following reagent classes:

1.



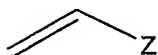
where R_1 can be H , CH_3 , CH_2Cl , CH_2OH .

2.



where R_2 is an alkyl with a carbon atom number between 3 and 5,

3.



where Z is a group chosen from: CONH_2 , CHO , COOR , COOX , where $R = \text{CH}_3$, C_2H_5 , and

where $X = \text{H}$, Na , K , NH_4 .

2) Polyaminomethylenephosphonate derivatives according to the preceding claim wherein n is preferably between 2 and 15000, and each R group, being the same or different, is independently selected from the following classes:

1. $\text{CH}_2\text{PO}_3\text{M}_2$ where M may be hydrogen or an suitable cation such as alkali metal or ammonium;
2. CH_2R con $R = \text{CH}_2\text{OH}$; CHOHCH_3 ; CHOHCH_2Cl ; CHOHCH_2OH
3. $(\text{CH}_2)_n\text{SO}_3\text{M}$ con $n = 3\div 4$ where M may be hydrogen or a suitable cation such as alkali metal or ammonium;

4. $\text{CH}_2\text{CH}_2\text{R}$

con $\text{R} = \text{CONH}_2, \text{CHO}, \text{COOR}_1, \text{COOX}, \text{CN}$

con $\text{R}_1 = \text{CH}_3 \div \text{C}_2\text{H}_5$

where X may be hydrogen or a suitable cation such as alkali metal or ammonium.

With the premise that at least one of substituent R always is different from $\text{CH}_2\text{PO}_3\text{M}_z$.

3) Polyaminomethylenephosphonate derivatives according to claim 2 wherein also at least one of the terminal $\text{CH}_2\text{PO}_3\text{H}_2$ moieties are substituted by one of the moieties under the above points 1 to 4.

4) Process for the preparation of the polyaminomethylenephosphonate derivative according to claims 1 or 2, comprising phosphonomethylation of polyamine derivatives by means of Mannich reaction.

5) Use of polyaminomethylenephosphonate derivative according to Claim 2 as scale inhibitors.

6) Use of polyaminomethylenephosphonate derivative according to Claim 2 as sequestering agents.

7) Use of polyaminomethylenephosphonate derivative according to Claim 2 as corrosion inhibitors.